

Maemo Leste: Mobile Hacker OS

Merlijn Wajer (merlijn@wizzup.org)

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What is Maemo Leste?

- ▶ Mobile OS for phones and tablets
- ▶ Based on Devuan (ascii release - Debian stretch based)
 - ▶ Might switch to ceres (buster) soon
- ▶ No vendor kernels: only mainline (with minimal patches)
- ▶ GNU/Linux experience: freedom, hackability (and bugs? ;-))
- ▶ Pre-alpha stage(!)

Why Maemo Leste?

- ▶ Tired of Android, other mobile OSes
- ▶ Open, hackable, not locked down
- ▶ Fun!
- ▶ Practical, lots of software exists already
- ▶ Community developed (!)

History: Maemo Fremantle

Mobile OS made by Nokia for the N900.

- ▶ GNU/Linux
- ▶ Uses the debian package manager
- ▶ Many FOSS gtk and qt based applications available
- ▶ Only some parts are open source
- ▶ Still maintained by the community: CSSU (Community Seamless Software Update)
- ▶ https://wiki.maemo.org/Fremantle_closed_packages
- ▶ https://wiki.maemo.org/Free_Maemo

Status

Maemo Leste is in a pre-alpha stage

The following mostly just works:

- ▶ USB host/peripheral/otg
- ▶ Virtual keyboard
- ▶ Wireless
- ▶ Audio
- ▶ Charging

Also see <https://leste.maemo.org/Status>

Status: work in progress

The following items are being worked on

- ▶ ofono (data, sms, calls)
- ▶ 3d acceleration (works on some devices)
- ▶ accelerometer, ambient light sensor, radio (fm: rx and tx), bluetooth, led control, gps
- ▶ browser

Infrastructure / CI

- ▶ Hosted on maemo.org servers, along with some of our personal hardware.
- ▶ Jenkins + jenkins-debian-glue builds our packages
 - ▶ <https://phoenix.maemo.org/>
- ▶ Build slaves are Allwinner and Softiron Overdrive machines.

Porting

- ▶ Replace HAL with eudev, upower, udisks, input devices, gadgetfs
- ▶ Port Maemo widgets and patches to Qt5, gtk
- ▶ Maemo CSSU has done a lot of porting and reverse engineering
- ▶ Replace or rewrite closed parts/dependencies
- ▶ Device specific X.org drivers (less and less)

Device: N900



- ▶ Generally in pretty good shape, needs some power management work
- ▶ Linux 4.15, with PowerVR patches, some powervr issues remain
- ▶ Wireless, battery, touchscreen, keyboard, usb peripheral, audio, led control works
- ▶ 3g data works without UI
- ▶ text messages work (phonecalls start, audio routing needs work) - lacks UI

Device: Motorola Droid 4



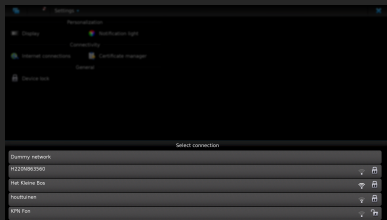
- ▶ Linux 4.14 (newer version also supports audio)
- ▶ No 3d acceleration yet (being worked on)
- ▶ Wireless, battery, touchscreen, keyboard, usb host and peripheral work
- ▶ 3g data, sms, calls are work in progress
- ▶ FOSDEM 2018: “Mainline Linux on Motorola Droid 4”

Device: Allwinner devices



- ▶ OLinuXino LIME2, Allwinner A33 tablets
- ▶ PineTab, PinePhone (they have a stand in the AW building!)
- ▶ 3d acceleration working!
- ▶ wireless, battery, touchscreen, usb host and peripheral work
- ▶ Mainline hardware video decoding!?

Device: Raspberry Pi 2+



- ▶ Working 3d acceleration, wifi
- ▶ armhf and arm64/aarch64

Device: virtual machine



- ▶ Works with Qemu, Virtualbox, VMware
- ▶ Useful for development
- ▶ Passthrough of hardware (usb wifi) is very useful

Future

Various milestones yet to reach:

- ▶ Alpha, Beta releases for N900, Droid 4
- ▶ Working phone calls, phone UI
- ▶ Proper IPv6 connectivity/support
- ▶ Tor integration, wireguard integration
- ▶ More here:
<https://github.com/maemo-lestes/bugtracker/milestones>

Generally:

- ▶ More community involvement (more people helping out)
- ▶ Support community devices: PinePhone, Necuno NC_1
- ▶ Anything you want

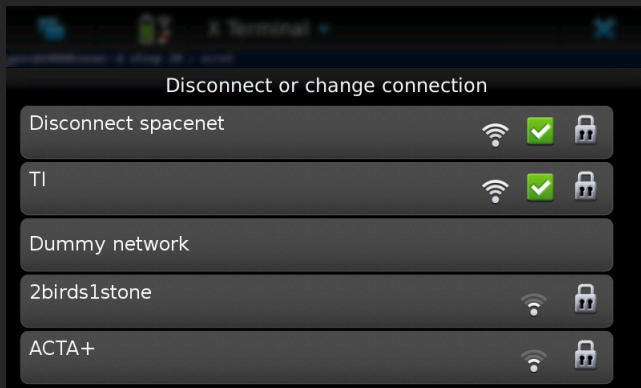
Summary

- ▶ Still in pre-alpha stage; alpha soon
- ▶ Already usable on several devices, more to come
- ▶ No phone calls ... yet
- ▶ Need more people to document, test and write code

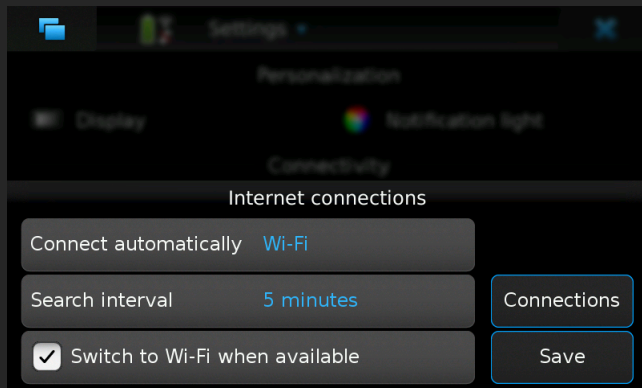
Similar efforts

- ▶ Nemo Mobile
- ▶ postmarketOS
- ▶ UBPorts
- ▶ KDE Plasma
- ▶ PureOS

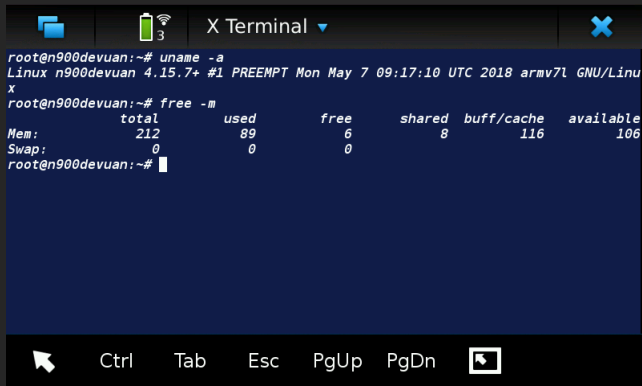
Screenshots



Screenshots



Screenshots



The screenshot shows a terminal window titled "X Terminal" with a dark blue background. The terminal output is as follows:

```
root@n900devuan:~# uname -a
Linux n900devuan 4.15.7+ #1 PREEMPT Mon May 7 09:17:10 UTC 2018 armv7l GNU/Linux
root@n900devuan:~# free -m
```

	total	used	free	shared	buff/cache	available
Mem:	212	89	6	8	116	106
Swap:	0	0	0			

root@n900devuan:~#

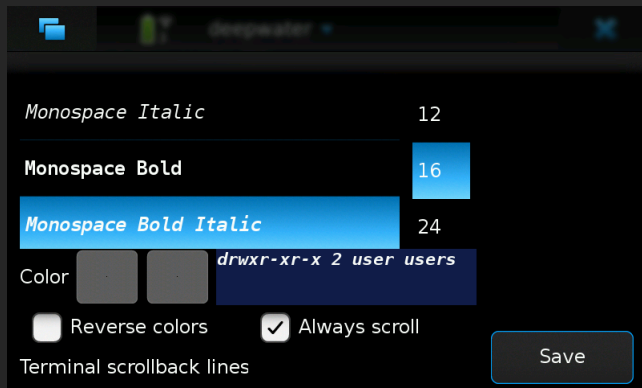
The terminal window includes a top status bar with icons for a folder, battery level (3), and a close button. The bottom status bar shows keyboard shortcuts: Ctrl, Tab, Esc, PgUp, PgDn, and a mouse cursor icon.

Screenshots

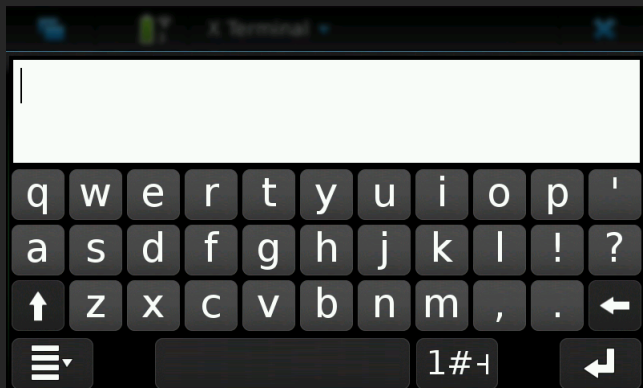


```
Maemo Leste is currently in pre-alpha stage | https://maemo-leste.github.io |
23:55 < Wizzup> I want to learn more about dbus and gdbus-codegen
23:55 < Wizzup> If I have to deal with ofono I don't want to write more by hand
23:59 -!- TheKit [~TheKit@94-21-243-95.static.digikabel.hu] has quit (Ping
        timeout: 250 seconds)
Day changed to 05 Dec 2018
00:00 -!- TheKit [~TheKit@94-21-243-95.static.digikabel.hu] has joined
        #maemo-leste
00:01 < Wizzup> spinal84: I can try to look at the applet code (or look at the
        battery issue and see if I see the same thing as you) towards
        the end of the week\
00:14 < spinal84> freemangordon, Wizzup, how does the kernel know the power
        devices are connected? I mean charger device and battery
        device. Maybe there should be a devicetree or something?
00:16 < Wizzup> they are in the device tree
[Act: 9,13,14,17,18,20,22,25,27,28,29,31,32,34,35,37,38,41,44,46,49,50,51,52,
[#maemo-leste]
-h 7:vi 8:vi 9:vi 10:bash 11:vi 12:vi 13:vi 30:irssi* 02:13
```

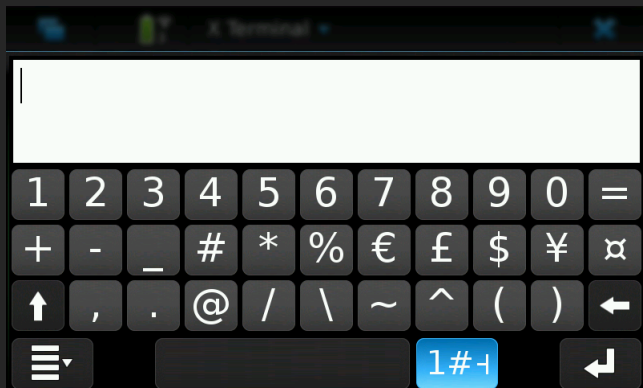
Screenshots



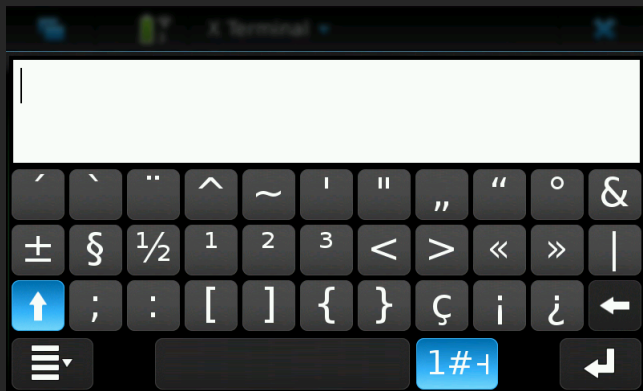
Screenshots



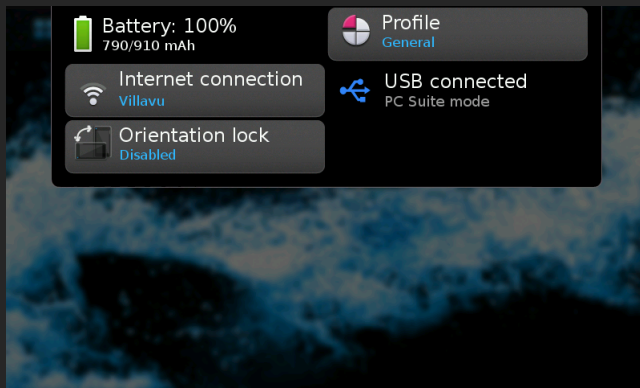
Screenshots



Screenshots



Screenshots



Resources

- ▶ Homepage: <https://maemo-leste.github.io/>
- ▶ Wiki: <https://leste.maemo.org>
- ▶ Source: <https://github.com/maemo-leste/>
- ▶ Bugtracker: <https://github.com/maemo-leste/bugtracker>
- ▶ Maemo community: <https://maemo.org>
- ▶ IRC: [#maemo-leste](irc.freenode.net)
- ▶ Mailing list: <https://mailinglists.dyne.org/cgi-bin/mailman/listinfo/maemo-leste>